BRUHAT BANGALORE MAHANAGARA PALIKE

NAME OF THE WORK : Whitetopping of road from Shesadripuram First Grade College to Aroma Bakery Junction via 3rd A cross Road,1st A Main Road,16th B Cross Road

Agency: NCC LTD.
MODIFIED ESTIMATE

Sl No	BOQ No	Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
1	1	Milling the bituminous pavement surface upto a depth of 55mm using milling machine, to make a uniform surface without disturbing the base, cleaning the milled surface, including cost of all labour charges and hire charges of machineries etc complete., including stacking the milled material on the sides of road.	Sqm									
		Profile Correction										
		Seshadripuram College to Vishnu park		0.0	450.0	1	450.00	0.94		423.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	1	650.00	2.00		1300.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1	880.00	1.12		989.75		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	1	280.00	1.96		550.00		
		Total Quantity								**3262.75**	**60.0**	**195,765**
2	2	KSRRB 300-50 Scarifying bitiminous course 50mm to 75mm thick along with premix carpet/surface dressing by power roller attached with scarifer without disturbing the base and stacking the debris including cost of all labour charges ,HOM of machineries complete as per specifications.MORTH / Chapter 3	Sqm									
		Seshadripuram College to Vishnu park		0.0	450.0	1	450.00	1.00		450.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	1	593.00	1.10		652.30		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1	880.00	1.10		968.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	280.00	1.50		840.00		
		Total Quantity								**2910.30**	**50.0**	**145,515**
3	5	Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/ trap/basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications. Clause 401 of MORTH V Revision.	Cum									
		Cross Ducts										
		Seshadripuram College to Aroma Bakery		0.0	1980.0	15	11.00	1.50	0.65	160.88		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	3	11.00	1.50	0.25	12.38		
		Total Quantity								**173.25**	**1600.0**	**277,200**
4	6	KSRRB M400-17. Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406	Cum									
		Footpath										
		Seshadripuram College to Vishnu park		0.0	450.0	1	450.00	2.50	0.40	450.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	1	650.00	2.50	0.40	650.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1	880.00	2.65	0.40	932.80		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	1	280.00	2.50	0.40	280.00		
		Total Quantity								**2312.80**	**1600.0**	**3,700,480**
5	7	KSRRB 500-11. Providing and laying bituminous macadam on prepared surface with crushed coarse aggregates as per design mix formula for base I binding course including loading of aggregates with F. E. loader, hot mixing of stone aggregates and bitumen in hot mix plant,transporting the mixed material in tipper to paver and laying mixed materials with paver finisher to the required level and grade, rolling by smooth wheeled,vibratory & tandem rollers to achieve the desired density, but excluding cost of primer I tack coat & including lead, lift and cost of all materials,labour, HOM complete as per specifications. Clause 504 of MORTH V revision -do - using 40/60 TPH capacity H.M.P. with	Cum									
		Profile Correction										
		Seshadripuram College to Vishnu park		0.0	450.0	1	400.00	3.00	0.08	90.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	1	280.00	3.00	0.08	63.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1	550.00	3.00	0.08	123.75		
		Total Quantity								**276.75**	**6000.0**	**1,660,500**
6	8	Dry Lean Concrete (DLC) for Profile correction of existing bituminous road surface before carrying out White Topping Dry Lean Concrete (DLC) M-5 for Profile correction of existing bituminous road surface before carrying out White Topping Construction of dry lean cement concrete sub base layer over existing scarified (to the depth of 25 mm with miller machine includes mobilization, diesel and operating cost, includes cleaning by air blower/sand blasting/brooming etc.) bituminous road surface with coarse and fine aggregate conforming to IS 383, the size of coarse aggregate not exceeding 25mm, aggregate cement ratio notto exceed 15:1, aggregate gradation after blending to be as per Table 600-1, cement content not less than 160 kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in ready mix concrete plant or a batching plant (to ensure consistency) transported to site, laid to the depth of 40 mm - 50 mm with a fixed form paver with electric sensor, having gang mounted vibrators equally spaced with variable rpm and atleast three integral steel tubes with 8-10 tonnes vibratory rollers for screeding, levelling, compaction, finishing and curing, includes lifting/shifting charges of paver, as per specifications complete. (cement 160kgs, coarse aggregate= 0.86 cum	Cum									
		Seshadripuram College to Aroma Bakery		0.0	1980.0	1	1980.00	1.35	0.10	267.30		
		Total Quantity								**267.30**	**3800.0**	**1,015,740**

	BOQ No	Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
7	9	Providing and laying White Topping as per IRC:SP76-2008 over bituminous surface (Existing bituminous surface preparation to be done if necessary either by milling or levelling course with BM/DBM to correct surface profile and to be paid separately) with unreinforced M-40 grade pavement quality concrete (PQC)using polymeric synthetic fibre as per ASTM (1116) such as polyester I polyethylene I polypropylene at 1.20 kg/cum, mixed in batching and mixing plant or weigh batcher as per approved mix design to achieve minimum flexural strength or modulus of rupture of concrete 4.50 MPa at 28 days limiting maximum water cement ratio to 0.40, transported to site, laid with mechanical paver finisher, spread, vibrated, compacted and finished in a continuous operation to the lines and grades as per drawing, texture finishing of surface, spraying two layers of curing compound, curing with water sprayed on hessian cloth coverd over concrete surface, groove cutting to a depth of 1/3 of the slab depth and of width 3-5 mm including the cost of filling the joint with joint sealant as per IRC 15, as per design (groove cutting to be paid separately). For Thin	Cum									
		Seshadripuram College to Vishnu park		0.0	450.0	1	450.00	7.50	0.18	607.50		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	1	650.00	7.50	0.18	877.50		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1	880.00	7.50	0.18	1188.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	1	280.00	7.50	0.18	378.00		
		Quantity								**3051.00**		
		Addition Quantity of 3.5% for Varying width								**106.79**		
		Total Quantity								**3157.79**	6500.0	**20,525,603**
8	10	Providing groove cutting for width of 4mm - 6mm and 1/3rd depth of PQC Whitetopping within 8-10 hrs of placing/finishing of PQC including cost of cutting machine, generators, HOM of machinery, blades, coolant etc., including cleaning of groove and providing sand and hot bituminous or equivalent approved sealant filling etc., including cost of conveyance of all materials, labour, lead and lift charges and all other incidental charges as per drawing and as per specifications.	m									
										26945.00		
		Seshadripuram College to Aroma Bakery		0.0	1980.0	1				4060.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	1				**31005.00**	75.0	**2,325,375**
		Total Quantity										
9	11	Providing and inserting of 12mm dia TMT bar at 500mm c/c & applying Lokfix of Fosroc chemical of approved brand for tie rods of 12mm dia & 500mm length for the construction of longitudinal joint in Pavement Quality Concrete (PQC) at every 500mm centre to centre along the length of the road, the 50% of the tie rods should be embeded on both sides of joint. The tie rod should be inserted in the PQC concrete with applying lokfix including cost of conveyance of all materials , labour, lead and lift charges and all other incidental charges as per the drawing, specifications and direction of Engineer In-charge etc., complete	Nos									
										619.60		
		Seshadripuram College to Vishnu park		0.0	450.0	620				929.40		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	929				1549.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1549				560.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	560				**3658.00**	100.0	**365,800**
		Total Quantity										
10	12	Providing and fixing DOWEL bars of dia 25mm,500mm length for construction joint in pavement Quality Concrete (PQC) at every construction joints along the width of the road ,the 50% of the dowel bar should be embeded on boths dies of joints,the exposed bar should be covered with PVC sleeves.The bar should be paints with epoxy paint and primer including cost of conveyance of all materials,labour lead and lift charges and all other incidental charges as per he drawing ,specifications and direction of Engineer In charge etc., complete.	Nos									
										146.40		
		Seshadripuram College to Vishnu park		0.0	450.0	146				219.60		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	220				366.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	366				65.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	65				**797.00**	450.0	**358,650**
		Total Quantity										
11	14	KSRRB 500-7. Providing and applying tack coat using 80/100 grade bitumen (VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Chapter 5	Sqm									
		Profile Correction										
		Seshadripuram College to Vishnu park		0.0	450.0	1	450.00	7.50		3375.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	1	650.00	7.50		4875.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1	880.00	7.50		6600.00		
		Consider 35 % of Total Area								5197.50		
		Seshadripuram College to Aroma Bakery		0.0	1980.0	40	8.50	7.25		2465.00		
		Total Quantity								**7662.50**	15.0	**114,938**
12	15	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 505 of MORTH V revision - do - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-11 (50 mm to 75 mm) with 4.5 % VG-30 Bitumen	Cum									
		Approach Roads										
		Seshadripuram College to Aroma Bakery		0.0	1980.0	40	8.50	7.25	0.05	123.25		
		Total Quantity								**123.25**	7200.0	**887,400**

		Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
		KSRRB 14.6.1. Providing and laying heavy duty cobble stones 100mm thick chiseled pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of M40 over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface inserts into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KRS	Sqm									
		Buffer Zone										
		Seshadripuram College to Vishnu park		0.0	450.0	2	380.00	1.30		988.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	450.00	1.50		1350.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	700.00	1.50		2100.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	275.00	1.50		825.00		
		Total Quantity								**5263.00**	1200.0	**6,315,600**
14	18	KSRRB M2200-5.6. Providing and laying Design mix M30 with OPC @ 360kgs, with 20mm and down size graded granite metal coarse aggregates @0.69cum and fine aggregates @ 0.46cum, with superplastisiser @31ts confirming to 189103-1999 Reaffirmed-2008 including cost of materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. - i) upto 5 m height	Cum									
		Buffer Zone										
		Seshadripuram College to Vishnu park		0.0	450.0	2	380.00	0.15	0.20	22.80		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	450.00	0.15	0.20	27.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	700.00	0.15	0.20	42.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	275.00	0.15	0.20	16.50		
		Seshadripuram College to Aroma Bakery		0.0	450.0	18	5.50	4.50	0.15	66.83		
		Total Quantity								**175.13**	6500.0	**1,138,313**
15	19	KSRRB M800-43. Installation of a steel portable barricade with horizontal rail 300 mm wide, 2.5 m in length fitted on a 'A' frame made with 45 x 45 x 5 mm angle iron section, 1.5 m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150 mm in width at an angle of 45°, 'A' frame painted with 2 coats of yellow paint, complete as per IRC:SP:55-2001 complete as per specifications.	Each									
		Seshadripuram College to Aroma Bakery		0.0	1980.0	131				131.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	118				118.00		
		Total Quantity								**249.00**	2500.0	**622,500**
16	20	Road Marking with Hot Applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:• Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms and 2 Ltr of Primer per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803	Sqm									
		Edge Line Continous										
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	0.15		135.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	650.00	0.15		195.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	880.00	0.15		264.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	280.00	0.15		84.00		
		Center Line										
		Seshadripuram College to Vishnu park		0.0	450.0	1	450.00	0.10		45.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	1	650.00	0.10		65.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	1	880.00	0.10		88.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	1	280.00	0.10		28.00		
		Zero Tolerance										
		Seshadripuram College to Aroma Bakery		0.0	1980.0					380.00		
		Zebra Croosing										
		Seshadripuram College to Aroma Bakery		0.0	1980.0					115.00		
		Traverse Bars										
		Seshadripuram College to Aroma Bakery		0.0	1980.0					965.00		
		Total Quantity								**2364.00**	450.0	**1,063,800**
17	21	KSRRB M800 Road markers / Road stud KSRRB M800-35. Supply and Installtion of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS (Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of Category A of MORTH Circular No RW/NH/33023/10-97 - DO III Dt 11.06. 1997. The height, width and length shall not exceed 50 mm, 100 mm and 102 mm and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 mm and height not less than 30mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer with 2 years warranty for the reflectivity from the original manufacturer is mandatory	Nos									
		Seshadripuram College to Aroma Bakery		0.0	1980.0					2784.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0					363.00		
		Total Quantity								**3147.00**	350.0	**1,101,450**
18	22	Retro-Reflectorised Traffic Signs Providing and fixing of retro - reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing. 900 MM Equilateral triangle -Type XI	No									

BOQ No.		Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
		Seshadripuram College to Aroma Bakery										
		Vishnu Park to Sandeepunnikrishnan Road		0.0	1980.0					95.00		
		Total Quantity		0.0	280.0					5.00		
19	23	Retro-Reflectorised Traffic Signs Providing and fixing of retro - reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing. 600 MM Circle -Type XI	No							**100.00**	5000.0	**500,000**
		Seshadripuram College to Aroma Bakery								72.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	1980.0					5.00		
		Total Quantity		0.0	280.0					**77.00**	4000.0	**308,000**
20	24	KSRRB 300-1. Earthwork excavation by manual means for roads, drains & similar works in ordinary soil excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specifications, MORTH I Chapter 3	Cum									
		Drain										
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	1.50	1.25	1687.50		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	650.00	1.50	1.25	2437.50		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	880.00	1.50	1.25	3300.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	280.00	1.50	1.25	1050.00		
		Footpath										
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	1.60	0.40	576.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	650.00	1.60	0.40	832.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	880.00	1.50	0.40	1056.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	280.00	1.60	0.40	358.40		
		Total Quantity								**11297.40**	100.0	**1,129,740**
21	25	KSRRB M800-29.2. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material overtop and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum450 mm in case of double and triple row ducts, joints to be made leak proof,invert level ofductto be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98- 1997 and approved drawings complete as per specifications. Case -II: Double row for two utility services	m									
		Cross Duct								170.00		
		Seshadripuram College to Aroma Bakery		0.0	1980.0	1	170.00			**170.00**	3500.0	**595,000**
		Total Quantity										
22	26	Providing and stone dust in foundation upto plinth to required depth for sub soil treatment including watering ramming with all lead and lift complete as per specifications and as per directions of engineer in charge	Cum									
		Cross Duct										
		Seshadripuram College to Aroma Bakery		0.0	1980.0	20	12.00	1.80	1.50	648.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	0	650.00			0.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	0	880.00			0.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	3	12.00	1.80	1.50	97.20		
		HDPE Pipeline										
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	1.50	0.30	405.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	650.00	1.25	0.30	487.50		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	880.00	1.25	0.35	770.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	280.00	1.50	0.35	294.00		
		Total Quantity								**2701.70**	2000.0	**5,403,400**
23	27	KSRRB M2200-5.1 Providing and laying cement concrete of mix 1:2:4 with OPC @ 240kgs, with 40mm and down size graded granite metal coarse aggregates @0.63cum and fine aggregates @ 0.42cum including cost of materials, labour, HOM curing, form works, scaffolding and centering complete as per MORTH Section : 2200 & IS 456 a) upto 5mtr heigh~ (M-15) (PW,P& IWTD SR 2018-19 P-226, I-28.7.1)	Cum									
		Drain										
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	1.50	0.15	202.50		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	650.00	1.50	0.15	292.50		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	880.00	1.50	0.15	396.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	280.00	1.50	0.15	126.00		
		Cross Duct										
		Seshadripuram College to Aroma Bakery		0.0	1980.0	20	12.00	1.80	0.20	86.40		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	0	650.00			0.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	0	880.00			0.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	3	12.00	1.80	0.20	12.96		
		Kerb PCC										
		Seshadripuram College to Vishnu park		0.0	450.0	2	500.00	0.30	0.15	45.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	750.00	0.30	0.15	67.50		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	900.00	0.30	0.15	81.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	300.00	0.30	0.15	27.00		
		Footpath										
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	1.60	0.10	144.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	650.00	1.60	0.10	208.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	880.00	1.55	0.10	272.80		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	280.00	1.60	0.10	89.60		
		Total Quantity								**2051.26**	5000.0	**10,256,300**

SNo	NMS No	Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
		KSRRB M2200-5.9. Providing and laying Design mix M20 with OPC @ 320kgs. with 20mm and down size graded granite metal coarse aggregates @0.69cum and fine aggregates @ 0.46cum, with superplastisiser @31ts confirming to IS91 03-1999 Reaffirmed-2008 including cost of materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. - i) Upto 5 m height.	Cum									
		Drain										
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	3.20	0.15	432.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	690.00	3.20	0.15	662.40		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	900.00	3.20	0.15	864.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	300.00	3.20	0.15	288.00		
		HDPE Chambers Raft										
		Seshadripuram College to Aroma Bakery		0.0	1980.0	40	2.50	1.00	0.20	20.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	6	2.50	1.00	0.20	3.00		
		HDPE Chambers Wall										
		Seshadripuram College to Aroma Bakery		0.0	1980.0	40	3.50	0.15	0.90	18.90		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	6	3.50	0.15	0.90	2.84		
		Total Quantity								**2291.14**	6300.0	**14,434,151**
25	29	KSRRB M2200-6. Providing T.M.T. steel reinforcement for R.C.C. work including straightening, cutting, bending, hooking, placing in position, lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per disign (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500	MT							148.92		
										148.92	62000.0	**9,233,274**
		Considered 65 Kg per Cum										
		Total Quantity										
26	30	Supplying HDPE pipes confirming to IS 4984:1995 with latest amendments and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and joining of pipes and specials including encasing the pipe around to a depth of not less than 15cm with soft gravel or selected earth available from the excavation etc., complete, giving hydraulic test as per relevant ISS with all lead and lift including testing and commissioning. The rate is exclusive of required specials and fittings etc., complete (Contractor will make his own arrangement for procuring water for testing) 110mm dia for OFC /Telecom /Surveillance Complete including all lead and lifts and as per the directions of engineer in charge. (HDPE Grade - PE100 confirming to IS 4984-1995) PN 6.0.	Rmt									
		HDPE Pipeline								1720.00		
		Seshadripuram College to Vishnu park		0.0	450.0	4	430.00			2600.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	4	650.00			3200.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	4	800.00			280.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0		280.00			**7800.00**	400.0	**3,120,000**
		Total Quantity										
27	31	Supply,fabrication and fixing of cast iron items such as recess manhole covers,bollards,manhole covers with gratings,etc as per approved drawing and confirming to BS-EN-124-B-124 standards(PW,P & IWTD SR 2016-17,Pg No VIII Sl No.223 Code No.0723) DR	Kgs									
		Shoulder Drain Grating & Cluvert Slabs Frame								7984.92		
		Seshadripuram College to Aroma Bakery		0.0	450.0					1250.02		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0					**9234.94**	140.0	**1,292,891**
		Total Quantity										
28	32	Supplying PVC ringtite pipe confirming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe alround to a depth of not less than 15cms with soft gravel or selected earth avilable from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing). 25 - 10 Kg/Cm2 (Class5)	Rmt									
		Domestic Water Supply Connections								46.50		
		Seshadripuram College to Aroma Bakery		0.0	450.0					**46.50**	70.0	**3,255**
		Total Quantity										
29	33	Supplying PVC ringtite pipe confirming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe alround to a depth of not less than 15cms with soft gravel or selected earth avilable from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing). 32 - 10 Kg/Cm2 (Class5)	Rmt									
		Domestic Water Supply Connections								49.50		
		Seshadripuram College to Aroma Bakery		0.0	450.0					**49.50**	80.0	**3,960**
		Total Quantity										

		Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
	39	Supplying PVC ringtite pipe confirming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe alround to a depth of not less than 15cms with soft gravel or selected earth avilable from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing). 50 - 6 Kg/Cm2 (Class3)	Rmt									
		Domestic Water Supply Connections								70.50		
		Seshadripuram College to Aroma Bakery		0.0	450.0					**70.50**	150.0	**10,575**
		Total Quantity										
	40	Filling in foundation with granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with lead up to 50m and lift 1.5m complete as per specifications. f) 12.5mm chips (Data Rate)	Cum									
31		**Tree Pits Filling**								152.31		
		Seshadripuram College to Aroma Bakery		0.0	1980.0					24.98		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0					**177.29**	1900.0	**336,844**
		Total Quantity										
32	41	Supplying and erection of R.C.C Rings for well steining of 0.3m depth using M-20 grade cement concrete using clean graded granite or trap or jelly of approved quality 20mm and down size well compated includig centering, from work and plastering for both faces with C.M.1:3 proportion as per design using 6.5m M.S. Coil at the rate of 10 KGs/ring including cost of steel and fabrication bailling out of water, errection etc.,(PRECB SR 2012-2013 P-44 ,8.8a-iii) For 1.20m dia(clear) ring of steining thickness 0.075 Mtrs up to 18Mtr depth. For 1.8 Mtr depth Number of rings required is 1.8/.3=6nos	Nos									
		Rainwater Harvesting Pits								90.00		
		Seshadripuram College to Aroma Bakery		0.0	1980.0					**90.00**	1000.0	**90,000**
		Total Quantity										
33	43	Providing and laying 100mm thick pre-cast U-shaped RCC drains using M20 grade Concrete reinforced with steel @ 5 kg per Sqm Precast units and jointed in CM 1:3 proportion and neatly finished including cost of labour, materials, HOM, curing, lead and lift charges etc, Complete as per MORTH specifications No. 1500, 1700 With size of 450 mm x 600 mm inner dimensions	m									
										420.00		
		Seshadripuram College to Aroma Bakery		0.0	1980.0					**420.00**	2100.0	**882,000**
		Total Quantity										
34	44	Providing and laying 100mm thick pre-cast cover slabs over drains of width not exceeding 800 mm using M20 concrete reinforced with steel @ 6.00 kg/Sqm, slabs jointed in CM 1:3 proportion and nicely finished including providing holes in the Cover slabs wherever necessary for easy drainage of surface water including of labour, materials, HOM, curing, lead and lift charges etc, Complete as per MORTH specifications No. 1500, 1700.	m									
		Drain								800.00		
		Seshadripuram College to Vishnu park		0.0	450.0	2	400.00			1000.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	500.00			1200.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	600.00			500.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	250.00			**3500.00**	1200.0	**4,200,000**
		Total Quantity										
35	46	Providing and fixing pre cast solid cement concrete kerb stones made out of C. C. 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1 :3 plastering and finishing cutting, including form work, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete.	Nos									
		Kerb								1777.78		
		Seshadripuram College to Vishnu park		0.0	450.0	2	400.00			2666.67		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	600.00			3333.33		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	750.00			1222.22		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	275.00			**9000.00**	300.0	**2,700,000**
		Total Quantity										
36	47	KSRB 14.6-1: Providing and laying heavy duty cobble stones 60mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	Sqm									
		Footpath								1800.00		
		Seshadripuram College to Vishnu park		0.0	450.0	2	450.00	2.00		2600.00		
		Vishnu Park to Chikkabomasandra Cross		450.0	1100.0	2	650.00	2.00		3520.00		
		Chikkabomasandra Cross to Aroma Bakery		1100.0	1980.0	2	880.00	2.00		1180.00		
		Vishnu Park to Sandeepunnikrishnan Road		0.0	280.0	2	295.00	2.00		**9100.00**	900.0	**8,190,000**
		Total Quantity										
37	48	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregtes @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 ems. thick, well compacted, for coping. Including cost of all materials, labour, HOM, curing complete as per specifications. Specification No. KBS 4.1, 4.2 (PW,P& IWTD SR 2018-19 P-255, I-34.11)	Cum									
		Restoration Works										

		Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
		Vishnu Park to Sandeepunnikrishnan Road								40.50		
		Total Quantity		0.0	280.0					**40.50**	6300.0	**255,150**
39		KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8	Sqm									
		Kerb										
		Seshadripuram College to Vishnu park										
		Vishnu Park to Chikkabomasandra Cross		0.0	450.0	2	450.00		0.35	315.00		
		Chikkabomasandra Cross to Aroma Bakery		450.0	1100.0	2	650.00		0.35	455.00		
		Vishnu Park to Sandeepunnikrishnan Road		1100.0	1980.0	2	880.00		0.35	616.00		
		Total Quantity		0.0	280.0	2	280.00		0.35	196.00		
										1582.00	90.0	**142,380**
39	50	Providing and laying reinforced cement concrete pipe NP3 for culverts including pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour, curing complete as per specifications. Specifications. No. KSRB 1000, 2300, MOST Specification No.1000 / 2300. 300mm dia.	m									
		Cross ducts & Shoulder Drain								298.20		
		Seshadripuram to Aroma Bakery								218.70		
		Vishnu Park Road								**516.90**	1800.0	**930,420**
		Total Quantity										
40	52	KSRRB M200-26. Dismantling Kerb stone by manual means and disposal of dismantled materials with all lifts and complete as per specifications. MORTH Specification No. 202	m									
		Seshadripuram to Aroma Bakery								3558.10		
		Vishnu Park to Sandeepunnikrishnan Road								560.00		
		Total Quantity								**4118.10**	25.0	**102,953**
41	54	KSRRB M200-14.2. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary. sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per specifications. Dismantling brick / Tile work B. In cement mortar. MORTH Specification No. 202	Cum									
		Seshadripuram to Aroma Bakery								1065.99		
		Vishnu Park to Sandeepunnikrishnan Road								120.58		
		Total Quantity								**1186.57**	350.0	**415,301**
42	57	KSRRB M300-19. Removal of unserviceable soil including excavation, loading and disposal but excluding replacement by suitable soil which shall be paid separately as per clause 300.5 complete as per specifications. MORTH Specification No. 301	Cum									
		Seshadripuram to Aroma Bakery								6749.88		
		Vishnu Park to Sandeepunnikrishnan Road								**6749.88**	50.0	**337,494**
		Total Quantity										
43	58	KSRRB M-100-1 Loading and Unloading of Stone Boulder / Stone aggregate / Sand Kanker / Moorum.KSRRB M100-1 : Placing tipper at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and return trip complete as per specifications.MORTH -100 / Chapter 1	cum									
		Seshadripuram to Aroma Bakery								17055.26		
		Vishnu Park to Sandeepunnikrishnan Road								3138.67		
		Total Quantity								**20193.93**	65.0	**1,312,605**
44	59	KSRRB M100-4.1. Cost of Haulage Excluding Loading and Unloading MORTH -100/ Chapter 1 Case-1 : Surface Road	cum									
		Seshadripuram to Aroma Bakery								17055.26		
		Vishnu Park to Sandeepunnikrishnan Road								3168.92		
		Total Quantity								**20224.18**	80.2	**1,622,788**
45	EIRL - 1	KSRB 5-14: Providing and constructing load bearing wall withsolid concrete blocks having block density not less than 1800 kg/m3 having a minmum average compressive strength of 4 n/mm2 confirming to is 2185 (part 1) :2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials labour charges , scaffoding , curing hire charges of machineries etc., complete as per specification .KBS NO5.4. 5.26.1- do - with solid concrete blocks of size 400x200x200mm	Sqm									
										337.83		
		Total Quantity								**337.83**	1029.9	**347,937**
46	EIRL - 2	Supplying HDPE pipes confirming to IS 4984:1995 with latest amendments and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and joining of pipes and specials including encasing the pipe around to a depth of not less than 15cm with soft gravel or selected earth available from the excavation etc., complete, giving hydraulic test as per relevant ISS with all lead and lift including testing and commissioning, The rate is exclusive of required specials and fittings etc., complete (Contractor will make his own arrangement for procuring water for testing) 200mm dia for Power Complete including all lead and lifts and as per the directyions of engineer in charge. (HDPE Grade - PE100 confirming to IS 4984-1995) PN 6.0. Consider BWSSB SR 2014-15 P 48, Item 1.B.7	Rmt									
										8915.05		
		Total Quantity								**8915.05**	1026.3	**9,149,783**
47	EIRL - 3	Supplying and drawing Flexible Multicore Cable manufactured with electrolytic grade flexible copper with low conductor confirming to IS:8130-1984 and (Virgin) PVC insulation sheathed suitable for working voltage upto 1100Volts as per IS-694:1990 3C X 1.5Sq.mm	Mtr									

		Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
		Total Quantity								144.00		
48	EIRL - 4	Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output. Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mouting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with W System Power consumption. LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in house facility accredited by NABL/CBRI	No							144.00	69.7	10,035
		Total Quantity								24.00		
49	EIRL - 5	Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output. Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mouting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with W System Power consumption. LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in house facility accredited by NABL/CBRI	No							24.00	7854.8	188,514
		Total Quantity								24.00		
50	EIRL - 6	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork to be paid separately) M20 Design Mix Using 20 mm nominal size graded crushed coarse aggregates (V-1,P.No.17, I.No.2.4.2 of PWD SR 2021-22)	Cum							9.00	8951.1	80,560
		Total Quantity								187.20		
51	EIRL - 7	Earth work excavation for cable trench of 0.3 to 0.5 Mtr. Width and Depth upto 1 Mtr including trial pits, depositing on bank upto a lead of 50 Mtr, Supplying and Displaying necessary Danger Boards and Lighting, Using sight Rails and Sign Boards at every 100 Mtr wherever necessary as directed.In Ordinary Soil.	Cum							187.20	262.6	49,159
		Total Quantity								0.65		
52	EIRL - 8	Laying of cable in Existing Trench/GI pipe/Stone Ware/RCC Hume pipe using Wooden/Aluminum Rollers as directed by the departmental staff LT Cable.2.5 to 25 Sqmm.	Km							0.65	16320.6	10,608
		Total Quantity								151.20		
53	EIRL - 9	Refilling the cable trenches with selected available earth from trench excavation including watering, consolidation in layers of 15 cm. Thickness including depositing of the surplus earth with a lead of 200 Mtr	Cum							151.20	58.6	8,857
		Total Quantity								48.00		
54	EIRL - 10	Fixing halogen/metal halide / SVL / IL / LED floodlight fitting over existing pole / wall ceiling including clamps, bolts, nuts and wiring using suitable capacity wires.	Each							48.00	190.9	9,163
		Total Quantity										
55	EIRL - 11	Fabricating, Supplying and errection of decorative Zig- Zag bent type Street light pole with hot dip Galvanized with BSEN 10025 grade S 355 JO Steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet for MCBs as per IS Specifications.suitable to with stand the wind speed. The total height of the pole 7 mtrs towards road and 5 Mtrs footpath.between the pole V shaped MS/any decorativ laser cutting jolly work The pole should have 2 nos of pole esthetically bent either side. The dimensions of the pole bottom square pipr of 175x175x4mmx2 Mtrs length and above 2 mtrs a dia of 76.1x3.25mmx5Mtrs and 3 Mtrs, as suitable to the Drawing and picture. The base plate size of 350mm x 350mm x 16 mm the pole shall be galvanized with not less than 65 micron etc and finally finished with PU paint as required with two different colour. (With out foundation). As per the enclosed Drawing ,pictures and IS standards compleet set includes templat 4 nos M20 x750mm anchor bolts.	No									

BOQ No.		Item Description	Unit	Chainage		NOS	Length	Breadth	Depth	Quantity	Rate	Amount
		Total Quantity								24.00		
										24.00	90647.5	**2,175,540**
56	EIRL - 12	Supllying of1.1 kV, XLPE or Heat resistant PVC insulated, PVC exutruted Inner Seath Armoured LTUG Cable as per IS-1554 (Part-1) or IS-7098 Part-1, Armouring strip thickness and resistivity as per IS-3975 25 Sqmm, 4 Core, (13 GI Strips - 4 x 0.8 mm)	Km									
										0.65		
		Total Quantity								**0.65**	183266.5	**119,123**
		TOTAL AMOUNT										**122,014,739**

Assistant Engineer
Project Division, Yelahanka

Assistant Executive Engineer
Project Division, Yelahanka

Executive Engineer
Project Division, Yelahanka

Technical Sanction
Accorded For Rs 12,20,14,739.00
Head of A/C P3756
CER NO 47 Dt 15.12.2023

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ